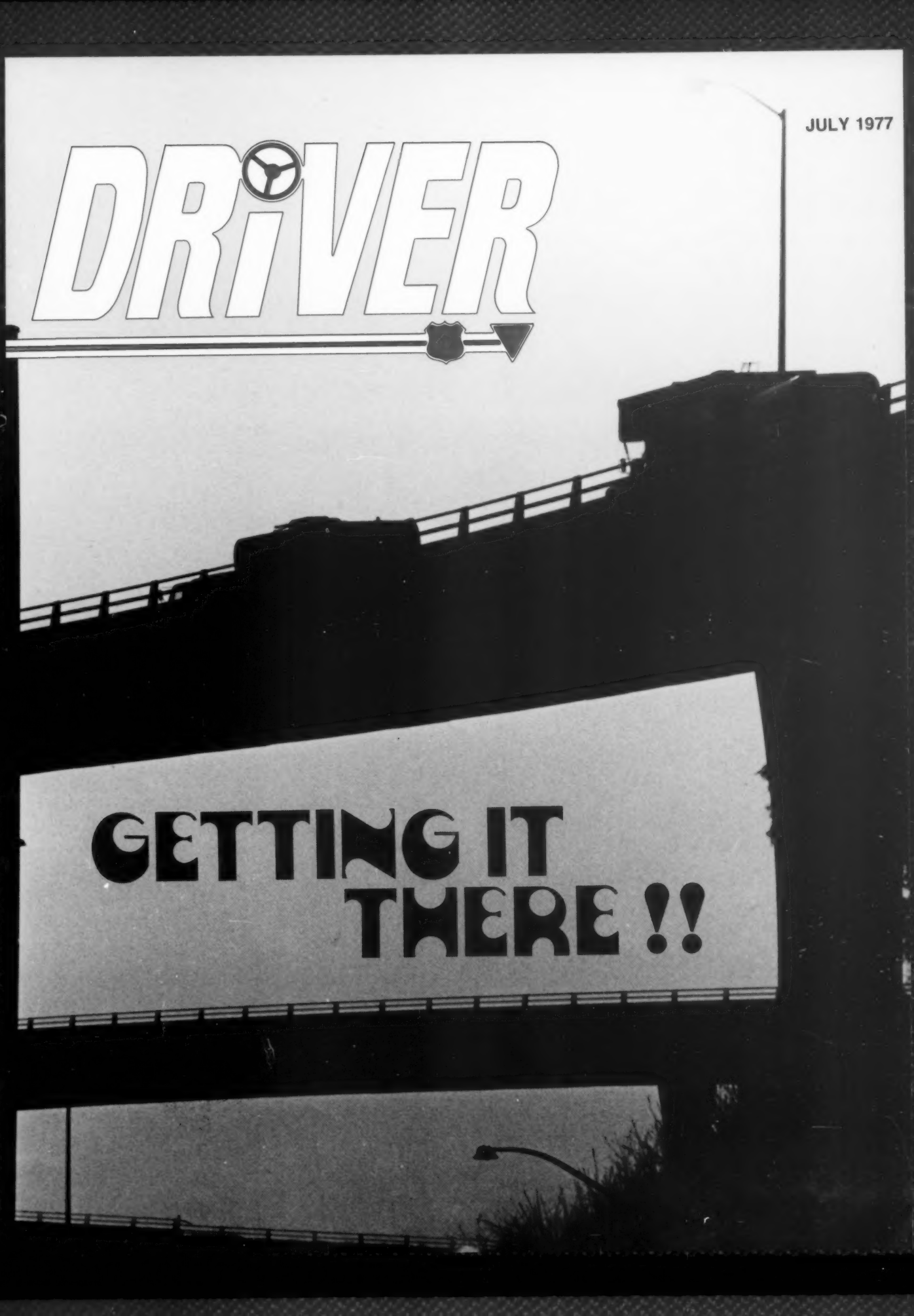
DRIVER

JULY 1977



DRiVER

by
MSgt MIKE KEEFE

GETTING IT THERE

So summer's here again and you're ready to head for that beautiful get away spot for some well-deserved relaxation and fun. Maybe it's going to be your first outing with a new boat, camping trailer, trail bike, hang-glider, or whatever recreational equipment suits your fancy?

Foremost in your thoughts is where to go and how long it's going to take to get there. But are you leaving the most important concern to chance? How are you going to safely transport all this extra recreational gear?

Some folks just load up their "mule" with all their equipment until his legs buckle, then remove a couple of small items and figure that this must be his maximum load capacity. Then they pile onto the poor critter and depart, expecting a safe and uneventful trip. If you think we're kidding, just take a serious look around you next time you're on the highway. You'll spot a lot of examples of vehicles you can't even see for the stuff stacked on top, in front, around, and behind.

Every driver should know the load and tow limitations of his vehicle. All manufacturers provide this information for their vehicles. These limits should not be exceeded because to do so severely taxes the cooling system, suspension, tires, brakes, and transmission. If you find you need to exceed your load limits, there are options available to provide the additional cooling for your engine and transmission, beefing up the suspension, etc.

For carrying lighter loads such as bicycles, skis, surfboards, and the like, there are many sizes and types of lightweight racks available. These you will have to purchase for your particular vehicle and for your specific needs such as size and mount-

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DRIVER

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JULY 1977

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THE EDITOR SPEAKS

DOUBLE CLUTCH

RISK TAKING

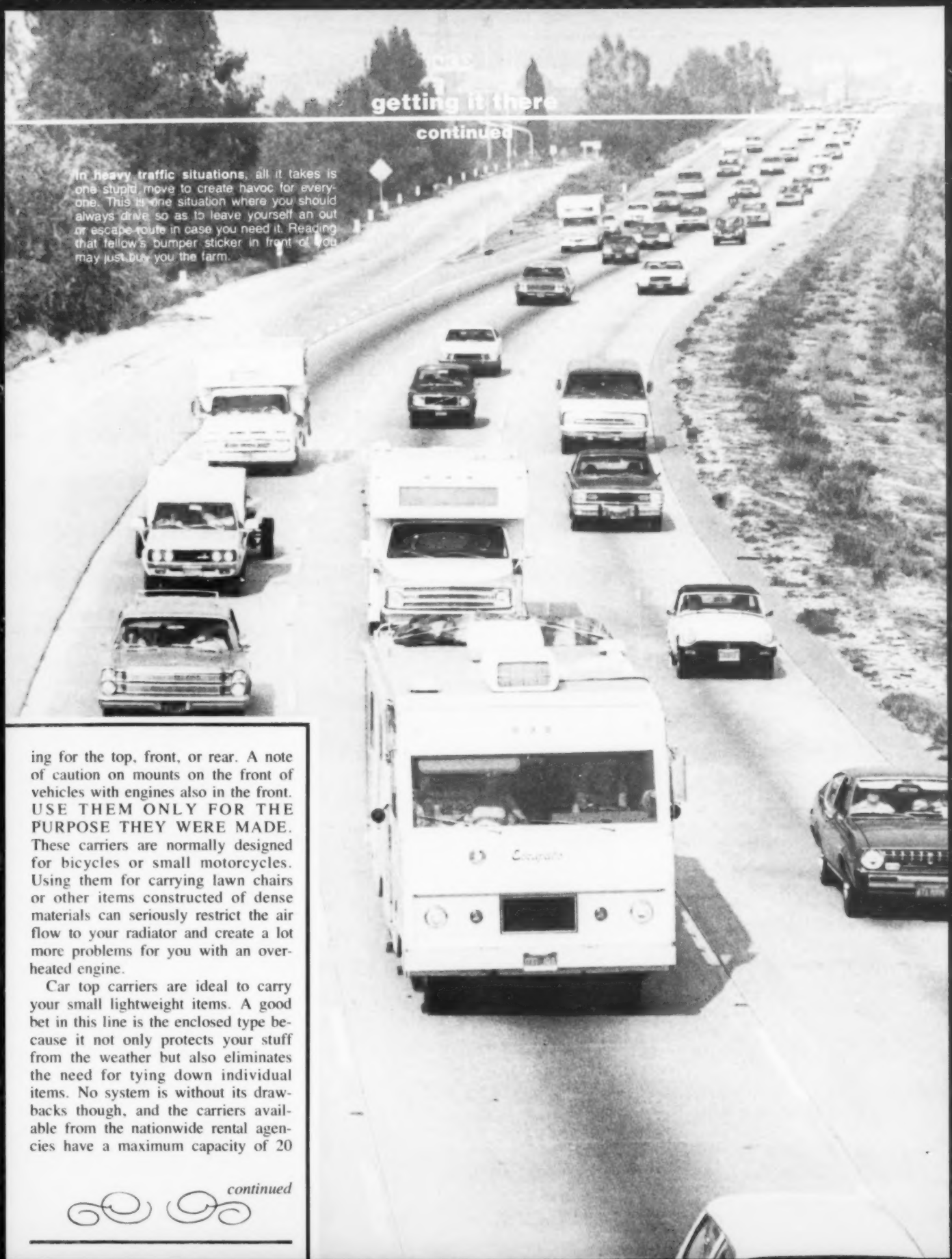
Writing in *Road Rider* Magazine recently (May 1977), Editor Roger Hull got to waxing philosophical about the human need for risk-taking. Says Rog, "The more effort the safety-first groups put into taking away danger, the more effort the rest of us seem to expend in seeking it out. Part of our mental makeup consists of a stubborn, illogical, perverse and very, very strong desire to go out and test ourselves now and then. To come to grips with a challenge and clobber it upside the head. That's at least part of the reason people climb mountains, kayak through rapids, fly hang gliders . . . and ride motorcycles."

We think Roger's words should be painted on the office walls of every safety-first group in the world. Including ours.

DRIVER has just completed 10 years of publishing safety information. In all those 10 years, we hope we have never lost sight of the human need to come to grips with a challenge. We know we have never said *don't* buy a motorcycle, *don't* try auto racing, *don't* get into hang gliding . . . or SCUBA . . . or snowmobiling.

What we do say is accept that challenge if you wish, but load the survival odds in your favor. You load the odds by respecting your mental and physical health, respecting your needs for training, and respecting your equipment.

What joy would life be without challenges? But why die trying and failing? It's so much better to meet the challenge successfully. And live to do it again.



In heavy traffic situations, all it takes is one stupid move to create havoc for everyone. This is one situation where you should always drive so as to leave yourself an out or escape route in case you need it. Reading that fellow's bumper sticker in front of you may just buy you the farm.

ing for the top, front, or rear. A note of caution on mounts on the front of vehicles with engines also in the front. USE THEM ONLY FOR THE PURPOSE THEY WERE MADE. These carriers are normally designed for bicycles or small motorcycles. Using them for carrying lawn chairs or other items constructed of dense materials can seriously restrict the air flow to your radiator and create a lot more problems for you with an overheated engine.

Car top carriers are ideal to carry your small lightweight items. A good bet in this line is the enclosed type because it not only protects your stuff from the weather but also eliminates the need for tying down individual items. No system is without its drawbacks though, and the carriers available from the nationwide rental agencies have a maximum capacity of 20

continued

getting it there

continued

cubic feet and a loading door 32 inches wide and 14 inches high.

The basket-type car top carriers are not as restrictive cargo-wise but do necessitate the use of additional tie-downs and possibly a tarp or other suitable covering to protect your cargo from the wind and weather. In using car top carriers a little common sense goes a long way. Don't use them for purposes they were not designed for and, especially important, don't overload them with more than they are designed to carry. Additional weight added to the top of your vehicle changes its center of gravity which can add up to an unwieldy, top heavy, unsafe vehicle to drive.

(above)

This may appear to be the "low budget" method of carrying something but is the price really worth it? The driver is probably more concerned with holding his cargo on the roof than the traffic around him. Luckily he isn't driving a "four on the floor" job or he really would have to be ambidextrous. We hope he didn't lose the little girl struggling to hold the load from his blind side, but with all his attention on holding his section of the load and driving he probably wouldn't have noticed anyway.

If you have more cargo than you can safely carry on top it would be wise to invest in a rental trailer of whatever size you need to augment your load and possibly even replace your need for a top carrier.

If you have more than one motorcycle and assorted gear, probably the best route to go, if you do not own a

continued

This small car shows sensible carrying of a light load proportioned top and rear. The use of mirrors on both sides affords the driver a view of surrounding traffic which is otherwise hampered through the rear window by the bikes on back.

These folks should have no problems with their cargo. Their load is well secured and the cargo is covered to prevent any blow-away. The passengers are also evenly distributed between all three seats of the station wagon, providing uncrowded comfort as well as even weight distribution.

This little "bug" shows its owners resourcefulness in making sure it goes down the road the direction he points it with rudders fore and aft. Hope he won't overload the top and go awash to the port or starboard.

Sometimes tragedy can't be averted. These people didn't make it to their weekend of boating but luckily no major injuries were sustained except by the cars and the boat. The reported cause of this incident was a third vehicle which made an unsafe lane change. In avoiding the other vehicle, these two autos and boat were left in this mess on the freeway. Is it possible that a more defensive and cautious attitude on the part of these two drivers would have given them the edge they needed to keep their vehicles under control in a crisis situation?

van or pickup, is a rental trailer. You can easily select one of the type you need for your load and vehicle size by checking the tables provided by the many nationwide firms in that business. If by chance you cannot find a reference table, a good rule of thumb the National Safety Council recommends is that a fully loaded trailer not exceed half the weight of your vehicle or 10 times its horsepower.

Some of the littlest of the compact cars on the market today are not made for pulling any kind of trailer. In this case you may find that you have to go to a rental vehicle to carry your cargo and tow your mini-compact.

Most carriers and trailers are designed for fairly easy attachment and removal so extreme care should always be taken when you install them by the use of tie-downs, straps, clamps, hitches, safety chains, pins, or whatever is required for securing them to your vehicle. The time spent in doing this carefully is cheap insurance that they don't easily detach themselves in transit.

After you have assured yourself that everything is secure as possible, don't relax yet. When you first start out, be especially mindful of the

continued

Towing double rigs gives the driver a lot more handling and control problems and should only be attempted by someone well experienced in hauling trailers. This set-up is not legal in all 50 states. Be sure and check the legality in states you plan to enter before attempting interstate travel.

A lot of the "do it in the dirt" advocates carry spares so their weekend won't be ruined by breakdowns. These two fellows made sure of this with a spare for their spare for their spare.

This fellow did a good job of tying down the bikes in his pickup but neglected to secure his loading plank. If it bounced out on the highway it would present a formidable hazard for anyone following him.

continued

changed handling characteristics of your loaded vehicle. Depending on your type load you can expect one or all of these effects: diminished power, longer braking distances, vehicle instability, and more difficult steering control.

Get the new feel and pay close attention to it. Stop immediately if you sense even the slightest change and check over your rig thoroughly.

Make it a habit to take more frequent rest stops, not only to stretch your legs but also to give the vehicle a routine check for security of the load. With the proper concern and respect towards your vehicle and its cargo, you should have an uneventful trip on your way to summer fun.

"There's one in every crowd." Practical joker that is, but the highway is no place to be joking around. This inflatable doll could be a lot of fun at a party but the distraction to other drivers might be enough to cause a major accident.

You can be sure that this passenger is not wearing his seat belt! In a confrontation with the pavement, there's no question who would come out second best.

"Hey, Harriet, how 'bout askin' Big Louie to move to the left side of the camper?" Weight distribution isn't just a matter of front and rear load stabilization . . . don't forget to consider the left-to-right load levels, too.

How'd you like to be driving along the freeway with this rig and get hit by a 12 mph crosswind? We're not great mathematicians, but we anticipate that this set-up won't exactly do beneficial things to the location of the center of gravity. Top-heavy isn't just a word used to describe a guy with a piano on his head.

These hang glider enthusiasts on safari have the right idea for the proper size and type vehicle for getting up those mountains they so dearly love to jump off.

Don't get yourself overtired playing on that last day. Remember you will be fighting the highway with a few hundred other tired weekenders, all with the same thought in mind: getting home. Take it a little easier on this last day and save some of that energy to safely drive home so that you will be around to spend more fun weekends.

THE BACKWARD MECHANIC

on fishing fun

I used to like to go fishing . . . as a matter of fact, I used to like to do all kinds of things on the water. You know, skiing and stuff. I USED to like things like that.

My graceful exit from water sports began early this season as I went out to one of our local fishin' lakes to hook up with a granddaddy bass. I got to the lake OK, but things kinda went down-hill from there . . . let me tell you about it.

Like I said, I got to the boat launching ramp OK, but it had been almost eight months since I'd tried to back up with a boat and trailer hooked to my truck. I was proud of myself, though; it only took three tries, zig-zagging back and forth, to get the trailer correctly positioned in the water.

Then I discovered that I had one of those rarities . . . a trailer that floats! After I fired up the truck and pulled the thing out of the water, I carefully removed the tie-down straps that held the boat on the trailer. Back into the water for a day of fishin' fun!

by
STANLEY R. DOERING, JR.
USAF Security
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Our intrepid backward mechanic does it again

The boat came off the trailer nicely. Unfortunately, I had also removed the tie-line to the trailer and watched silently as the boat easily glided out 20 feet into the lake. Some durn smart-alec kid charged me 50 cents to swim out, grab the tie-line, and tow the boat back in.

Being careful not to overload the boat, I loaded up the tackle box and the cooler, and got that kid to push me off. As I made my way to the back of the boat to start the engine, I noticed that my tennies were getting wet. I'd always assumed that the purpose of a boat was to create a hole in the water where one can be comfortably dry, so naturally, I investigated. Boy, I'm here to tell you that the drain plug hole is big enough to let in LOTS of water if the plug isn't installed. Since there was a crowd of about 700 people on shore watching me at this point, I decided that the only thing to do was fire up the engine and get up to speed where the self-bailer would take effect.

I stuck the key in the ignition, pulled the choke, and got an immediate response from the engine . . . grrumph-PAH. The ol' dead battery trick. Do you have any idea how embarrasing it is to sit in a sinking boat with a dead battery and be only 20 feet offshore?

But, since I AM safety conscious, I did have a paddle along. I never realized how much water weighed when it's inside the boat.

Everything went smoothly as I bailed out the boat, and then when I found a guy with some jumper cables, I really thought I had it licked.

It felt so good to go zipping over the smooth surface of the lake . . . the wind in my face, the clean smell of the air, THE LOG IN MY PATH!!! I never imagined an outboard engine would rev so high when it was thrown out of the water. I inspected the prop and found that both blades were OK. Unfortunately, it used to have three blades . . . oh well. Luckily, I had my trusty spare shear pin along, so I motored off slowly so the out-of-balance prop wouldn't vibrate the boat to pieces.

When I reached my favorite fishin' spot, there were only six other boats there. For some reason, they had managed to arrive at the lake *after* me and at the fishin' spot *ahead* of me. I silently accused them of not having any sporting instinct.

I decided to try and squeeze in anyway, and I was grateful that the broken prop was under water . . . I hate people who snicker.

I picked out a likely looking spot under a nice tree that hung out over the water, and paddled over to tie up to a limb. At that point, a 47½-foot SNAKE dropped out of the tree and into the boat! Now, if my wife had been with me, it would have been trouble time . . . I, on the other hand, remained calm as I picked up the paddle and began bashing the snake. I was quite surprised to see the amount of damage that a wooden paddle can do to a metal tackle box, and I was glad I'd decided not to use the anchor to subdue said snake. Well, I finally connected with that snake just after I crushed my coffee thermos. The snake had shrunk during the course of our battle, and was now only 12 inches long. Thanks to clever costuming, it now resembled a little green tree snake.

As I reached up again to try and tie up, I felt something soft and papery. Let me tell you, folks, wasps CANNOT take a joke. The critters got my hand and eyelid before departing outbound. One stayed around to do harrassment duty, and in attempting the "one-legged wasp avoidance ballet," my wrist watch flew off and landed with a noise that was not "thud" . . . sounded more like a splash. I wondered briefly how much it would cost to have "TO STAN WITH LOVE" engraved on the back of a duplicate watch.

I opened up my handy-dandy first-aid kit and started groping around for the sting medicine before I remembered I'd used it all up on the last trip. I hoped my depth perception wouldn't be too impaired when my eye swelled shut.

I gave up on that particular spot and moved on to another little location that I *knew* would produce some fish. I threw out the anchor (being *extremely* careful not to stand inside the coil of anchor line) and reached for my trusty fishin' pole . . . as we used to say in the 'Nam, "No Hab, Papa-san." When I discovered that I'd left the pole in the truck, I was tempted to flog myself with the tackle box, but I thought better about it when I remembered how my wife snickered at me when she had to treat the lumps and bumps I got when I tried my last tune-up on the car.

After I exhausted my vocabulary of

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naughty words, I headed back to the dock. I thought that I'd at least be able to get a couple of catfish by fishing off the landing.

Back at the dock, I was greeted by my ol' friend Harve, who had decided to do a little shore fishing to get away from his wife who was entrenched in front of the TV watching the NBA playoffs. Now, Harve is a good fella, but

fishing really isn't his thing, and he doesn't do it regularly. He showed up to catch catfish with a five-foot bass rod, 40-pound test line, bobbers big enough to buoy the Queen Mary, and a converted crappie-catchin' rig complete with three 12-ounce weights.

After he loaded the rig with an unbelievable concoction of worms, cheese, four-day-in-the-sun liver, and salmon eggs, he tried a cast. Unfortunately, he forgot to release the catch on the reel, so *he* wound up with a backlash on his reel and *I* would up with that nasty liver splattered all over the side of my truck. It took him only a half-hour to get the snarl out of his line, and then he was ready to try again.

The next cast was better on distance, but not so hot on accuracy . . . the whole mess of worms, weights, bobbers, etc., went sailing over the dock and smacked a guy who was just sittin' there minding his own business. He fell off his fishing chair and into a boat that was tied up next to him. After he got untangled from the mess of hooks, bait, etc., he stalked over to Harve and politely inquired if the rig was his. Harve said "yes" and the guy let him have it in the choppers with a quick right.

Harve pulled out the two loose teeth, and changed to a smaller arrangement of hooks and sinkers. I won't bore you with how many times he caught himself in the tail while casting, or how he managed to hook his tackle box with his windup and then send it sailing over the water, or the real reason the Ranger threw him out.

At that point, I decided it just wasn't much of a day for fishing, so I began to pack up and get the boat back on the trailer. I put my fishing rod in the cab of the truck and went around to hook up the trailer. Evidently that smarty kid who towed back my sinking boat had wanted to get even, and he'd packed the trailer hitch with black mud that squirted out all over my shoes when I let the hitch down on the ball. If I *ever* get my hands on him . . .

After only two jackknives, I got the trailer in the water. I set the emergency brake and got out to begin hauling in the boat. As the truck door closed, I heard a small "crunch." I found out later that it costs more than $10 to replace the rod tip on an expensive fishing pole.

I stood on the trailer to pull the boat in, but I got the tie rope snagged and moved forward to release it. As I bent over the snag, I lost my balance and kinda fell through the trailer rails into the water. I barked my shins royally, and I got my cigarettes wet to boot. I also lost my new sunglasses.

I got the boat lined up with the trailer, attached the winch rope, and began cranking. That ol' boat was so heavy I thought I'd take a short rest, and I let go of the winch handle. In sort of a slow-motion movie, the boat began to move back down the trailer, and the winch handle began to smack my knee with regularity. When I stopped hurting and began cranking again, I set the ratchet lock on the winch.

The winch rope broke as I had about two feet left to crank. As I stood there trying to regain some semblance of self-control, I noticed the truck and trailer were rolling into the water. I guess I should have fixed that parking brake, but I just haven't had the time; and next time, I'll also put the beast in "Park." I got it started just as water began pouring under the door.

With one good eye I saw that people were beginning to take interest in my activities, so I quickly tied seven granny knots in the broken winch line and hauled that boat on the trailer. The Ranger was just coming over as I exited the parking lot.

Well, that's about all there is to the story of why I quit boating. I will say that Joe's Used Boats has a special this week on a slightly used boat, motor, and trailer combo, and I'll give you a great price on a custom-shortened fishing rod.

All is not lost though. I still feel the need for some sort of hobby that gets me out of the house and helps with my physical conditioning, so, next week I'm picking up my new motorcycle. . . .

How Cold is the water?

BY
SAFETY SUE
USA

The Army has experienced a lot of off-duty drownings lately and at first nobody could figure the reason. Why, in one year, should 78 guys – young, in good physical shape, and able to swim – go out for some fun and end up dead in the water?

Sure, there are things like overconfidence and showing off and too much booze. But 78 people?

An Army investigator sat down with copies of the drowning accident reports and dug in. Soon he began to see a pattern. Most soldiers were drowning in two ways: The victim dove into the water and simply didn't come up, or he came up only to go back under without a sound. What happened to the buddy system? Well, in almost every case there *was* someone else around. But he either couldn't reach the victim in time to help or didn't even see or hear him go under.

So what was the pattern the investigator saw that seemed to explain these drownings? Would you believe just plain old cold water? According to the medics, if we take a good swimmer who is in top physical shape and put him suddenly in cold water, he can drown very quickly in one of two ways.

First, he can literally gasp himself to death. Some of the drownings occurred when men dived into cold water, causing their bodies to automatically gasp. Gasping sucks water into the lungs and one can drown almost immediately without ever coming up at all. You may have experienced this sensation in a very cold shower.

Second, the victim starts to swim a distance that is well within his capabilities. He gets out a little way and the cold water literally begins to tie his muscles in knots. If the water is cold enough, he struggles very little and just sinks below the surface. Incidentally, booze makes it worse by bringing the blood to the skin surface and speeding up the loss of body heat in the arm, leg, and stomach muscles.

So that's what it is. Plain old cold water can kill you even if you're a super jock. There is almost nothing you can do to avoid its effects except to stay out of it.

You Army types are going to be hearing a lot from me in the next few months. The Army safety people at Fort Rucker have put together a "Safety Sue" program to try to stop these needless drownings. For the rest of you service people I just want to say a couple of things: There are many lakes, rivers and quarries around military installations that remain cool to extremely cold year 'round. Maximum temperatures never exceed 55 or 60 degrees. Be aware of what that cold water can do to you. And watch that booze before swimming. About half the drownings I've been talking about involved alcohol to some degree. Alcohol deteriorates judgment and increases the willingness to take risks. It impairs water skills. Most important, it increases the body's susceptibility to cold water while at the same time suppressing warning signals.

Remember these four danger signals:

- The slightest onset of cramps.
- The onset of shivering.
- The lips, ear lobes, fingers, toes or any other extremities beginning to turn blue.
- Unusual or uncontrollable breathing such as sudden gasping or rapid breathing.

Sgt Lonnie Smith (right) talks with Sgt John Quist and SrA Rodney Wilson, emergency vehicle drivers, as they wait their turn to run the course.

Trooper J. P. Rozypall of the Texas Department of Public Safety, watches for hit pylons or flags.

DRIVING EMERGENCY VEHICLES

by **SSgt PAUL J. LaROCHE**
Wilford Hall USAF Medical Center
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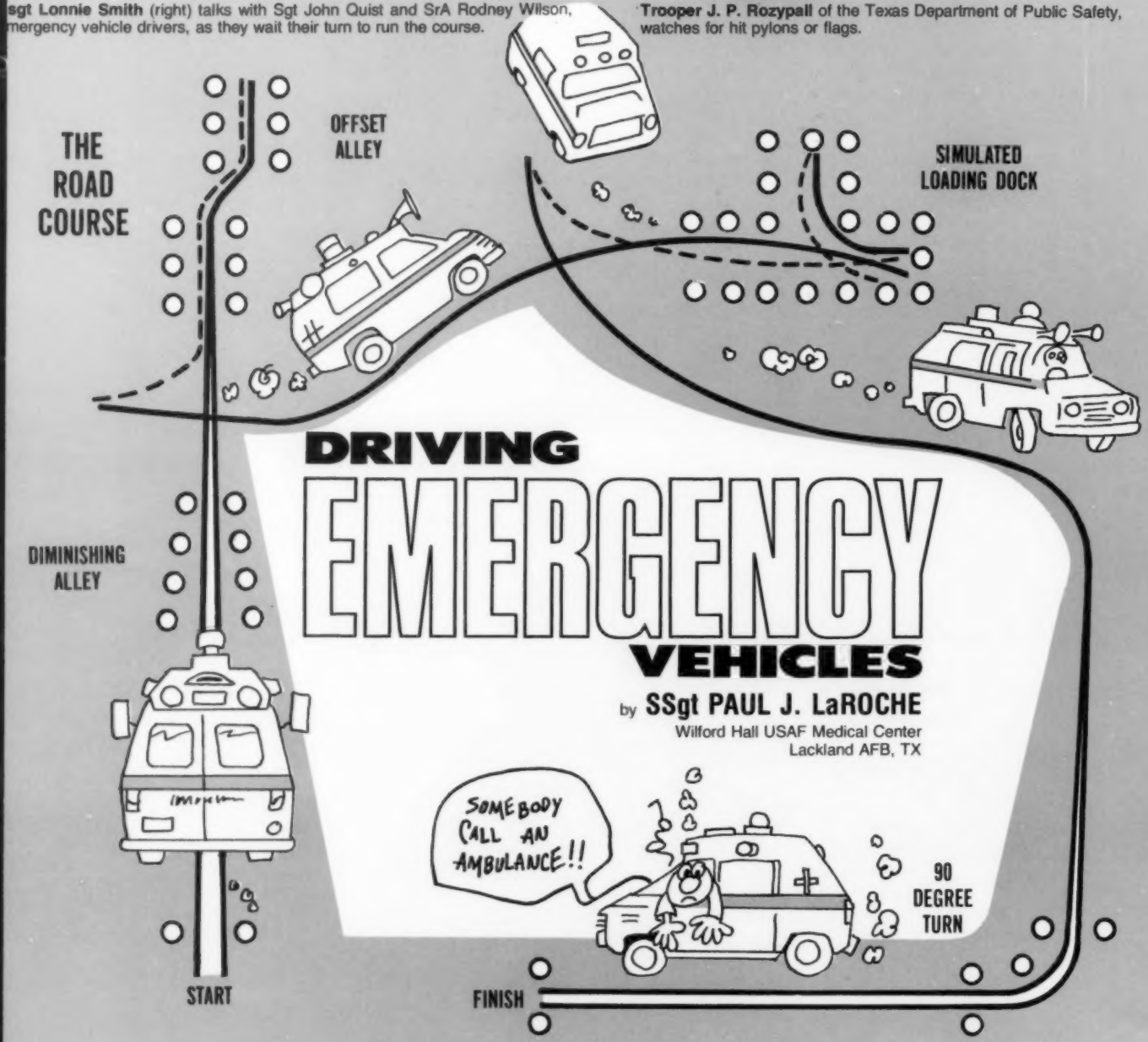


You start with a perfect score of 100 and every time you hit a flag, or pylon, or had to readjust your position, it cost you five points.

Driving an ambulance or any emergency vehicle has always been a dream of mine. It might sound weird, but I could see myself barreling down the road at 90 mph, with sirens screaming and lights flashing. What a thrill!

As a journalist-type stationed at Wilford Hall USAF Medical Center, Lackland AFB, Tex., I secretly hoped for at least a ride in a speeding emergency vehicle. When the Medical Center received five new van-style ambulances, the idea to do a story on them and maybe get my ride at the same time was very appealing. So I called SSgt Lonnie L. Smith, vehicle control NCO for the Emergency Room, to begin my research.

The vans were equipped with heavyduty suspension, 350 cubic-inch engine, and a dual electrical system.

"Boy, I'll bet they do well on the road," I said.

"Yeah, well, our drivers will be much more familiar with them once they finish the Emergency Vehicle Drivers Course," Sergeant Smith said.

"The Emergency Vehicle Drivers Course?" I queried.

"I got the idea from an article in DRIVER Magazine. I contacted the Texas Department of Public Safety and we've worked out the program complete with road course. It's the first time this type of course has been given here," the sergeant said.

A first. Got the idea from DRIVER. The old wheels in my head clicked and the thoughts of driving the vans momentarily overshadowed the journalist in me. I could possibly publish this.

Then I remembered the DRIVER story. The California Highway Patrol, along with March AFB medical people, set up a fantastic course at Riverside International Speedway. They were doing speed turns and running an obstacle course that rivaled any autocross I ever drove. I was ready to run that course. Oh, yes, and do the story. I talked Sergeant Smith into letting me join the class for a better insight into the course.

Before any roadwork could be done, we had to attend classes. The first class was mainly movies about defensive driving and driving skills. It was very interesting but nothing really new. Then, James I. Anderson, our instructor from the Education Branch of the Department of Public Safety, said something that took me by surprise.

"Emergency vehicle drivers are not out to break any land speed records. Your first responsibility is to get the patient to the hospital safely, and that means the speed limit or less in most cases."

continued

The 90-degree turn was tricky and the perfect place to learn what top-heavy means.

continued

That evening, I thought about his comment. It makes a lot of sense, but there are times for speed. Right? We'll probably cover that on the road course.

The second class reaffirmed Mr. Anderson's comment with coverage of laws of emergency vehicle driving in Texas and freeway driving in the state. At the end of class, Mr. Anderson started talking about the road course.

"Tomorrow we'll meet at the drill pad," he said as he pointed to an area on a large base map. "Now let's go over the course."

I perked up in my seat and thought, this is what I've been waiting for.

"Most of the course will be driven at 10 mph or less."

With score sheet in lap, Mr. Anderson explains the obstacle.

Author uses side mirrors to back out of the offset alley.

The new van-style ambulances have little visibility out the rear.

WHAT! My face must have shown my surprise as Mr. Anderson smiled at me and continued.

"This course is based on a combination of our auto and truck rodeo courses. The obstacles have been scaled to the van. Our purpose is to give you a chance to familiarize yourself with the maneuverability, or lack of it, with these new ambulances. The course includes a diminishing alley, an offset alley, a simulated loading dock, and a 90 degree turn."

After drawing each obstacle on the board and going over the maneuvers, Mr. Anderson asked for questions. "If not we'll see you tomorrow."

Boy, was I feeling down. What happened to Riverside? I didn't really want to go to the course, but I started this story so I had to finish it.

The next day I reported to the drill pad. It had rained most of the night and was still sprinkling. As I watched some of the other drivers, I couldn't stop feeling sorry for myself. Then it was my turn.

Mr. Anderson first explained the scoring system. "You start with a perfect score of 100. Every time you hit a flag or a pylon, it costs you five points. Also, if you have to adjust your position to avoid hitting a flag or pylon, that's another five points. O.K., let's get started."

I buckled up, and started the engine.

"The first obstacle is a diminishing alley. This trains you to aim high on the road. Maintain a speed of 20 mph through the pylons and come to a stop."

I went through without a hitch.

"Next is the offset alley. This maneuver simulates moving your ambulance into an accident area and then backing out. Drive through the pylons, swerve to the right, and into the garage. Then back out the same way. Take your time, speed is not important."

This one was tricky. I pulled in, but backing out was another story. I hit a pylon, then had to move forward to adjust my position to get out. I lost 10 points.

"Now the simulated loading dock. Drive into the pylon area and then back into the garage. Then get out the same way. This simulates backing into a space between two other ambulances. Again speed is not important."

This time I hit a flag. At that point I realized something very important. These vans have very poor visibility and tight maneuvers are next to impossible without practice. And that's what we're here for.

The final part of the course was the only thing that barely resembled an autocross maneuver.

"Get your speed up to 30 mph, brake and negotiate the 90 degree turn safely, then speed up to 20 mph and stop by the end pylon."

As I made the turn I discovered the meaning of top heavy. The van leaned sharply to the left and I thought for sure it was going to tip. Somehow I made it and I hope never to make a turn like that again in a van.

After driving the course, everything started to fall into place. You don't need Riverside to familiarize yourself with the handling characteristics of a new vehicle. Any parking lot on a Sunday afternoon could do. Anyway, around here, ambulance drivers have little cause to exceed the speed limit. Most important is safe maneuvering in tight areas.

And then Mr. Anderson's message finally got through this thick skull of mine. It's not how fast you get to the hospital that counts, it's simply getting there safely.

I'll probably never get to drive an ambulance with lights flashing and sirens screaming. But now I don't think I want to. I'll just stick to autocrossing for my speed kicks.

the overheated engine

You're idling along in traffic one fine summer day, congratulating yourself on how great the air conditioning unit is working, when there it is: the overheat signal on the dashboard. What a bummer! In addition to being mad about the inconvenience and worried about the car repair bills you might be facing, you're also about to risk serious personal injury. Even the simple act of removing the radiator cap when overheating occurs requires a special technique. Here's what to do:

1. When the overheating becomes evident, stop the car as soon as it's safe to do so. Turn off the ignition.

2. Wait for the engine to cool down. The wait may be some minutes long but it's vital. A fine mist of water will help cool the radiator, but *do not* put a stream of cold water on the engine or radiator.

3. When removing the radiator cap, protect your hands with a thick glove or a heavy wad of rags. Keep your face as far away from the radiator area as you can.

4. If the radiator cap has a lever, button, or other pressure release device, use it to allow excess steam to escape. In any case, turn the cap counterclockwise until you feel the seal has been released. Wait until the hissing stops before removing the cap completely.

5. After the engine cools sufficiently, start it again and add water slowly. Adding water too quickly to an engine that has not cooled enough can damage the engine.

Taking care of the cooling system can save you a lot of grief. Coolant laden with rust and other contaminants should be replaced. Don't be fooled by the word "permanent" on the antifreeze container. It can lose its effectiveness after a year or so of use, especially if you've added water. If the system is to be drained, flush it thoroughly to remove scale and rust.

Don't start out on a long trip without checking the radiator and hoses for leaks under pressure. High temperatures and normal ageing will weaken hoses, especially those connected to the heater, the engine block and the radiator. The thermostat and the radiator cap should be checked and replaced if necessary. Either one can cause overheating. And be sure the fan belt isn't frayed, cracked or deteriorated from grease. Tension is important, too; loose belts can cause overheating.

RACING... CHEAPER AND SAFER THAN FLYING?

At several thousand dollars a throw and 180 miles an hour, Al Levenson thinks racing is cheaper and safer than flying.

Al's been involved in both nearly a dozen years, since he went into the Navy. Today, he teaches aviation maintenance at Embry-Riddle Aeronautical University, the nation's only four-year school for aviation skills. In his spare time—and with every penny not needed for food and shelter—he races his 1966 Corvette.

"Do you have any idea what it costs to get a private pilot's license?" he asks. "And then what do you have? A piece of paper saying it's okay to go spend $20 an hour to rent a little plane. By the time you've gotten it on the runway and have permission for takeoff, 20 minutes of your hour are gone. Then you ride around a while, look down and say, 'oh, that's nice,' and come back down. Boring—unless you get into bad weather, and that's just plain silly."

Even discounting adverse weather,* he says, racing's still safer than flying.

"Hey, if something goes wrong with your airplane, what're you going to do—pull it over to the side of the road?" Levenson asks. So he races, and his house has ended up looking more like a racing garage than a hangar, and hardly at all like a home.

It gives little exterior hint of its real use. The only signs of racing are a '61 Corvette and an Austin Mini-Cooper covered in tarps in the driveway.

The minute the front door opens, however, the smell of drying fiberglass screams the house's secret. To the left of the doorway, the darkened living room wears a wall-to-wall carpet and nothing else. At the end of the hall are the kitchen and den—at least, that's what he says are hidden under the stacks of crated engine parts.

In the den, the coffee table and chairs are buried under stray engine parts. Racing and flying magazines, broken and bent relics of past races, and loaded ashtrays are tossed in to make it interesting. One ashtray is shaped like a tiny tire, with a glass "wheel" in the center.

The back bedroom—seriously called the "engine room"—is the heart of the operation. A spotless engine mounted on a rotating frame commands attention in the center of the room.

In the dining area, the source of the fiberglass smell is spread over the table. Levenson and his student-friend-crew chief, Dan McBride, have just made a new fender flare for the 1966 Corvette, the one Levenson races, and they're waiting for it to dry.

"I figure, maybe if new flares are fairly cheap, I won't worry so much about getting into a tight situation in a race," Levenson theorizes.

He says he's never had a "real wreck" in his racing career, "probably because I'm too careful. I could finish better if I weren't quite so cautious," he says. "Also, I know that every single nick or crack in that car is coming right out of my pocket."

There's a two-fold remedy to that last item, he believes. One is the do-it-yourself route, the evidence of which covers the dining room table. The other is to find a generous sponsor.

"I may be a little harder on the car if I've got a sponsor. I really want to show off for him. He wants a winner, and I want to give it to him," Levenson says.

For the next three or four races, he's going to be showing off for Helene and Bo Roberson, Board Chairman and President respectively of Daytona Budweiser, Inc., the Anheuser-Busch distributor in Volusia and Flagler Counties.

When Levenson asked for their backing, they were willing. He and the other two drivers on his team, Guido Levetto and Dan Rice, gave the Robersons an 18th place finish in the Day-

continued

Al Levenson getting ready for his next race.

**Ed Note: Adverse weather conditions are a major factor in general aviation accidents.*

On the track in the night session of the 24 Hours of Daytona.

racing—cheaper and safer than flying?

continued

The 02 race car at the Daytona International Speedway.

Al Levenson joined the U.S. Navy in October 1965. After boot camp at Great Lakes, Illinois, he went to Memphis for aircraft machinist mate (ADR) school. He was stationed at AOMD Norfolk, Virginia, for three years and while there started racing a '61 Corvette in local amateur events.

He was discharged from the Navy in 1970 and went to Daytona Beach to attend Embry-Riddle Aeronautical University. He became affiliated with the Naval Reserve at the NAS in Jacksonville and was promoted to the rank of 1st Class Petty Officer. He started racing in an Austin Mini-Cooper during this period.

In 1972 he moved with the Squadron VR-54 from Jacksonville to NAS Atlanta.

While at Atlanta he was promoted to Chief Petty Officer and assigned to billet of squadron line supervision. He is currently in VR 21 at Atlanta working with C-118 aircraft and awaiting the transition to DC-9 aircraft.

tona 24-hour, a twice-around-the-clock endurance race—quite a respectable finish, considering the top-notch competition and the size of the field they were running with.

Levenson got his first taste of playing with race cars in Norfolk, Virginia while he was in the Navy. He set up the '61 Corvette for autocrosses, timed events on closed courses, and in 1970 he was champion of the Tide-water Corvette Club there.

When he came to Daytona Beach to study at Embry-Riddle Aeronautical University, he brought the Vette with him and autocrossed with the Daytona Beach Sports Car Club, which named him Member of the Year in 1972.

The call of road racing led him to an Austin Mini-Cooper, which he campaigned on the Sports Car Club of America tour for two years. But the Corvette marque sang a sweeter song, and in 1975 he built and first drove the '66 Corvette he now drives with his big "02" on it.

After running it in SCCA events, he set up the car for the International Motor Sports Association professional series, racing in four IMSA events at the Daytona International Speedway, and finishing 18th in two of them—the July 4, 1976, Paul Revere 250, and this February's 24 Hours of Daytona, under Daytona Budweiser sponsorship.

Levenson has chosen "02" for his racing number, he says, for reasons "most people haven't heard." He says 02 is his Naval Air Reserve designation, and "besides, you hear all the old guys telling tales about 'back in 02,' in the seaplane squadron . . ."

He freely admits an oversized ego is what keeps him involved in racing, despite the danger he chooses to deny, and the perpetual money and family problems. "Racing's guaranteed to cost you a lot of money and maybe a wife," he claims. "Not many women are willing to compete with a car."

"But what an ego trip!" he exclaims. "Even for the people in the crew, there's a real thrill in racing. You say, 'I raced with Mario Andretti.' or, 'last year, when I was pulling up past Paul Newman . . .'" But suddenly Levenson is off on a different tirade.

"Paul Newman this, Paul Newman that—every little girl at the track comes up to me all goggle-eyed: 'Have you seen Paul Newman? Did you really talk to him? Are his eyes really that blue?' Well, when he's on the track, Paul Newman's a race driver, not a movie star."

Levenson's complaint is admittedly motivated by more than a twinge of jealousy: Levenson loves the adulation heaped on a race driver, and Newman gets more of it.

Even so, he says, "on a race day, maybe two or three hundred people will come say 'hi' to me, 'good luck, Al.' Now, you know my head's got to swell on that!"

But the crowds are fickle, he warns. "You've got to keep racing. The minute you quit, they forget you."

So, as long as Levenson can find a sponsor or scrape up enough of his own money, he'll stay on the tracks.

His do-it-yourself ability, gained largely through his aviation training, may have more than a little to do with his staying power.

After 12 years of maintaining and repairing DC-6 aircraft engines, he is able to build a race car engine with little fooling around. "There's really not much difference in the two, except maybe engine speed," he claims.

A racing engine develops up to 7000 rpm, compared to a small aircraft engine's 2500 to 2800 rpm.

"But the tolerances are pretty much the same. If anything, the airplane engine has a tighter tolerance. When you're building an aircraft engine, there's no room for a mistake. People's lives depend on your doing it right," says the aircraft maintenance instructor.

So far, with his own life depending on his car-building accuracy, Levenson has come through with flying colors.

cleaning the car

THE CAR THAT WEATHERED the big winter and spring storms of '77 deserves a clean-up and some cosmetic pampering to help preserve its beautiful body and interior.

To guide owners with an automotive beauty treatment in mind, John Farley, Chrysler's Manager of Technical Services, offers 13 tips, starting with the interior:

1. Most car upholstery fabrics are treated with soil-resistant finishes that make dirt sit on the surface. Prevent loose dirt from working into the fabric by frequent vacuuming. Or keep a whisk broom in the glove compartment and brush frequently, unless fabric has raised tapestry threads that brushing could damage.

2. To clean the new velours and other fabric upholstery or auto carpeting, vacuum loose dirt and treat stains. Then use foam cleaner or a mild detergent or soap. Apply suds first to an inconspicuous area to be certain it won't damage color or finish. Rub sparingly with a sponge into small area at a time. Wipe off excess suds and moisture, first with a damp cloth, then a clean, dry cloth.

3. Clean vinyl or leather upholstery with suds from a bar of mild, non-alkaline soap or special leather or vinyl cleaner. (Some vinyl upholstery cleaners also clean vinyl tops.)

4. To remove water-based stains (ketchup, milk, ice cream, coffee, some candies), use dull-edged knife to remove as much substance as possible. Wipe with a cloth dampened with warm water. If stain persists, rub lightly with cloth wet with cleaning fluid.

5. Scrape oil-based stains (butter, mayonnaise, grease, lipstick) with a dull knife. Use solvent-type spot cleaner. Start outside and work to center to avoid leaving ring. Blot up excess and loosened oils with clean white paper towel.

6. Chewing gum or tar should be hardened by chilling with a cube of ice. Then proceed as for oil-based stains (see tip #5 above).

7. White stains left on carpeting by salty snow and slush can be removed by vacuuming, then careful work with a stiff bristle wire brush. For stubborn stains, apply a solution made with one cup of table salt to a quart of water. Wash off with foam-type upholstery cleaner.

8. Vinegar cuts the film on inside and outside glass. Use two tablespoons to a pint of water.

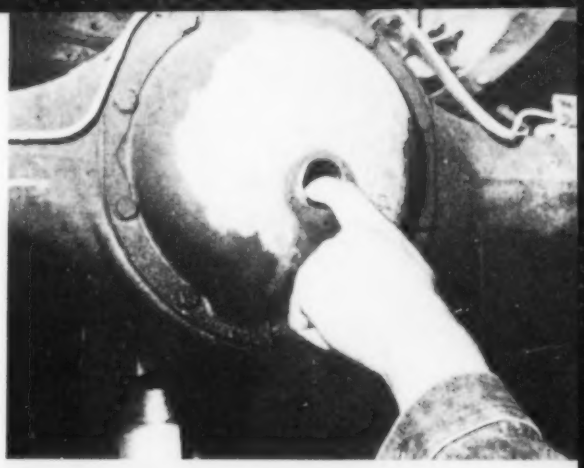
9. Mud and corroding road salts can be removed from unseen spots at a do-it-yourself car wash. Aim the warm, pressurized soap spray from the hose underneath the car, particularly at fender wells, rocker panels and inside surfaces of bumpers.

10. The liquid soap that relieves dishpan hands (*not* strong dishwashing machine soaps) helps the do-it-yourself car washer by preventing water spots.

11. Don't wash the car in the sun or when paint is hot. After soaping and rinsing, don't wipe with a dry cloth. It can scratch the paint surface. Use a damp towel or squeezed-out chamois.

12. To restore showroom shine to an older car, use a cleaning paste or liquid specifically recommended for deeply imbedded grime. Then apply polish. A one-step cleaner and polish will do for a newer car with only a mild coat of road film.

13. A daub of wax over a small break in paint stalls spread of rust. Better yet, treat with a touch-up paint coded to your car's color. Put a minimal amount of paint on the touch-up brush and stroke lightly.



Check the standard transmission and differential fluid levels by removing the plugs located on the side or back of the housings. If the car is sitting level, the fluid should at least be even with the bottom of the hole. Your manual gives lubricant specifications.

THE BACKYARD MECHANIC

FLUID LEVEL CHECKS

Good preventive maintenance begins with scheduled checks of your car's vital fluids.

by
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No one enjoys being left stranded on a back road with an automobile that won't "auto." Breakdowns are a real hassle in terms of both safety and embarrassment. You can, however, greatly reduce the chances of a breakdown simply by establishing a system of routine checks that will insure that your car's vital fluids are kept up to their proper levels.

Checking fluid levels regularly can be one of your best sources for spotting troubles before they happen. How about that water level in the radiator . . . is it low? Could be you're about due for an overheat. Brake fluid gradually disappearing? You may be about to suffer through a brake failure. Fluid checks can prevent troubles before they begin and can save you time and money.

In some cases, our recommendations will differ from that of the manufacturer's . . . we recommend checks at shorter intervals than they do. Your car may require checks not listed in this article. We have tried to cover the majority of checks, but be sure to consult your owner's manual for specific requirements.

What we suggest here is a plan based on weekly, monthly and semi-annual inspections. There is no need to adhere to a rigid mileage schedule, but if you drive more than 1000 miles a month, you may want to adjust your semi-annual inspection to a quarterly inspection.

Some people record the checks, and their results, on a 3x5 card. This will not only help determine when the next checks will be required but can be a bonus if you ever decide to sell your car. Prospective customers will appreciate seeing the maintenance records.

Weekly Checks. Just a few years ago, your friendly gas station attendant was more than willing to pop the hood and do a few routine checks. Now, unless you're well versed in pulling hen's teeth, you probably won't get that guy under the hood. With the advent of self-service stations (see Dec. '76 DRIVER) many owners are neglecting the simple checks. If you can get in the habit of making the checks at home on your day off, you won't be told to "move along" at the corner gas station.

Engine Oil Check. Raise the hood and locate the engine oil dipstick. It is usually a long piece of metal extending upward from the engine and having a hook or circle grip on the end, Even though it may be hard to locate the dipstick the first time, don't neglect this check. All engines use oil to some degree, but an engine that runs out of (or even low on) oil is bound for trouble.

This check should be made with the engine cold to prevent overfilling with oil. If the engine is warm, wait at least one minute after shutdown to insure oil has drained off upper engine parts. Remove the dipstick (if the engine is hot, the dipstick will be too, so be careful) and wipe it with a clean, dry cloth or paper towel. Take a close look at the markings on the lower end of the dipstick. Some will have "MIN" markings, some will say "ONE QUART LOW," others have "ADD." All these marks indicate the level below which the oil should not fall. The marks generally indicate that one quart will be needed to bring the level up from the "low" to the "full" mark. After you put the dipstick back in its guide, run it down and seat it, and then withdraw it. Read the level and determine if you need to add oil. If the level is between the marks and you have an open can of the correct oil around, just pour it in till the level is correct. If you are at a gas station, the attendant will not sell you part of a quart of oil, so you'll have to either put in what you need and then carry the open can along with you, or hold off till you get home. Don't

(left) While you're underneath the car and near the rear end, check the shock absorbers for oil leaks. It wouldn't be a bad idea to also look over the fuel tank and gas lines, and check the rear brake hoses for leaks or kinks. **(right)** If you find the fluid level in your automatic transmission is a bit low, check for leaks caused by a bad tailshaft seal. Examine the area where the driveshaft mates to the rear of the transmission. There should be only a small amount of fluid around this area.

Other areas where transmission fluid leaks can occur are: **(left)** speedometer cable connection, **(center)** transmission oil pan gasket, and **(right)** transmission fluid cooler connections.

overfill with oil. This can cause foaming of the oil and subsequent loss of oil pressure. Overfilling will also cause your car to smoke badly on both startup and run.

Battery Level. Unless you have a sealed, "lifetime" battery, checking and maintaining your battery can be dangerous, but if you follow a few common-sense procedures you won't have any trouble. Checking the fluid (electrolyte) in a battery is a super-cheap alternative to battery replacement at $50 a shot.

Keep in mind that when your car's charging system is replenishing the battery, a chemical reaction that generates hydrogen gas is taking place. This reaction doesn't cease when you turn the engine off, so don't smoke or bring open flame near a battery. It's best to check a battery with the engine cold to prevent any possible problems.

continued

(right)
Radiator leaks can often be traced to loose hose connections. Check for clamp tightness and/or pinhole leaks in hoses.

To check brake fluid level, remove cap on master cylinder. Some caps have clip retainers like this one, (left) others may be attached to the cylinder by a bolt through the center of the cap. Fluid level in either fluid well should not be down much more than ¼-inch. (right). Also check condition of cap seal and bladder assembly.

(left) Oil dipstick may be hard to locate and hard to reinsert. A dipstick also has a nasty habit of getting very hot, so use a rag to remove it if the engine has been operating for any length of time. **(center)** As you withdraw the dipstick, clean it with a rag. Reinsert and withdraw again to check oil level. **(right)** Most oil dipsticks have markings to indicate proper oil level.

The battery will normally be under the hood in the engine compartment, and can be identified by the filler caps on its top and the two large electrical cables connected to it. Some cars like VWs and Audis have the battery under the rear seat, while others will have it under a panel behind the front seat (MGs, Triumphs, etc.) The battery will have three caps if it is a six-volt rating, and six caps if it is 12 volts. No caps mean a "lifetime" battery that will not need water.

The filler caps can be either a push-fit and slide in or out, or threaded into the battery top. Remove these caps carefully and don't let their lower surfaces come in contact with your skin or your car's paint. Battery acid won't do either of them any good. If you do get acid on your skin, immediately wash the area with large amounts of cold water (see Feb '77 DRIVER).

Observe the electrolyte level in the battery by looking down into the individual cells. There is a ring located about three-quarters of an inch down in the filler hole. If the fluid is below this ring, the battery needs water. If you can see that the level is below the top of the plates (the plates look like cut cardboard cartons placed in a sandwich) then you are on your way to a battery failure unless you replenish the water.

If any or all of the cells are low, refill them to the ring with distilled water (available in your local grocery store for about 50 cents a gallon) using a small, clean funnel. Pour slowly so that the fluid doesn't splash back out of the battery and get on your skin. You *can* use tap water if that's all you have, the theory being that any water is better than no water, but tap water will hasten the demise of the battery.

Replace the vent caps and wipe the top of the battery with a cloth that leaves the top clean and dry. Dispose of the cloth in a place where the kids or the pets won't get hold of it.

Coolant Level. While you're under the hood for your weekly checks, have a go at the cooling system fluid levels. This check is best accomplished with a cold engine to avoid the chances of injury from a hot system.

The radiator is the part of the cooling system that is most prone to cause problems, and it is the part which allows you access to the cooling system to check the coolant level. The radiator is located at the front of the car, usually just behind the grille, and is connected to the engine block by large hoses.

Do the following checks with the cooling system cold:

Before opening the radiator cap, take a quick look at the hoses. They should not be cracked or crushed and should be located a safe distance from the fan. And, while you're getting into the dark recesses of the engine compartment, why not check out the condition of the fan and alternator belts?

If your radiator has a cap located in the center of the radiator top, the coolant level should generally be about one inch from the bottom of the filler neck (that's the part that the cap attaches to). If the system has the cap located off to one side, chances are that you have a "crossflow" system and the radiator will have a "COLD FILL" mark stamped near the filler neck. Be sure the level is at or near the cold fill mark.

When adding coolant, it is best to use a 50/50 mixture of all-season antifreeze and water. The antifreeze not only keeps the cooling system from freezing, it also increases the boiling point of the coolant so you will have less potential for boilover.

Some newer cars, particularly those with air conditioning or heavy-duty cooling systems, will have a coolant recovery system. This is nothing more than a plastic tank, called an expansion tank, attached to the radiator or inner fender and connected to the radiator by a small hose. When the coolant gets too hot and expands too much for the radiator to handle, the excess coolant flows into the expansion tank. As the system cools down, water flows from the tank back into the radiator to maintain the proper coolant level.

If you have a coolant recovery system on your car, it isn't necessary to remove the radiator cap to check coolant level. Just glance at the transparent sides of the expansion tank. It will generally be marked with the proper levels, and you can add the water/antifreeze mixture directly to the tank instead of the radiator.

One more caution. Some of today's cars (Honda, etc.) use many aluminum components in the engine, and regular ethylene glycol-based antifreeze compounds can damage aluminum. Consult your owner's manual to determine the proper type of antifreeze to use in your particular car.

Monthly Checks. Depending on your regional climate, the WINDSHIELD WASHER fluid should be checked at least monthly . . . more if you live in the southwest.

The reservoir for the windshield washer fluid is usually located under the hood toward the front of the engine. It may take the shape of a bag or sack, or it may be in the form of a see-thru plastic tank. It will have a hose or hoses running from it to the rear of the engine compartment and then up toward the rear edge of the hood.

The fluid level can be checked at a glance, and if low, refilled with a mixture of water and windshield-washer solvent/antifreeze. Some car owners (notably, VWs) will have to check for air pressure in either the tank itself or in the spare tire, because this air is what propels the fluid from the reservoir to the windshield washer nozzles.

Brake System. Probably the most important monthly check is that of the fluid level in the master cylinder or brake fluid reservoir. Unlike some other fluids in your car, brake fluid is not consumed . . . if it's low, you've got a leak, period.

The master cylinder is attached directly to the brake pedal and directs the flow of brake fluid to the individual brakes. It will be found on the firewall of the engine compartment, on the driver's side, and may take the shape of either two clear plastic fluid reservoirs on top of a metal tube, or a metal tank with two small-diameter metal tubes coming from it. In both cases, the top (or tops) will be removable. The plastic tanks usually have a screw-on top, while the metal reservoir will have a cap that is held on with a large wire clip or secured by a bolt through the center of the cap.

Clean the area around the cap and

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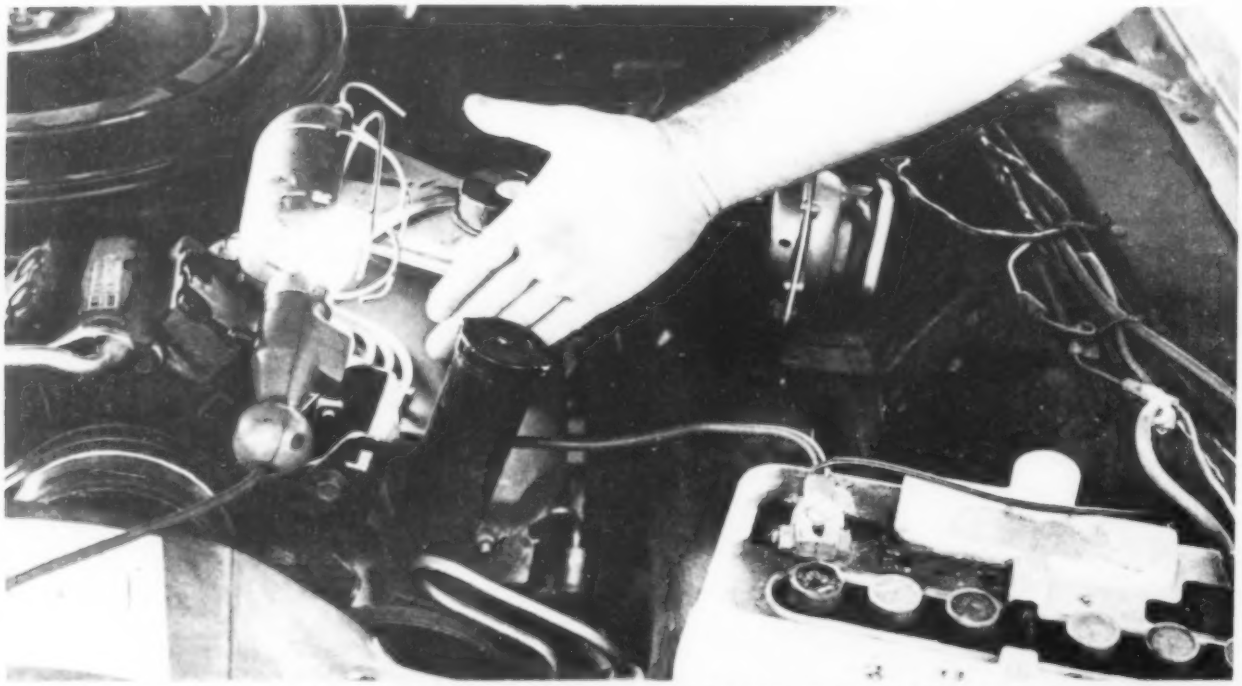


Power steering pumps are not always this easy to find. Most pumps have dipsticks, but if yours doesn't, check to see that fluid level comes up to the base of the "chimney" of the pump. This check should *not* be made with the engine running.

remove it. Fluid level should be within ¼-inch of the top. If the fluid level is down, add fluid meeting the manufacturer's specs and get yourself to a place where a qualified person can check the system for leaks.

Some cautions to remember: DON'T use brake fluid from a can that has been opened. Brake fluid is hygroscopic, that is, it absorbs water, even from the atmosphere. If that can of brake fluid you have has been opened to the air, partially used, then recapped, chuck it . . . don't even fool around with it. Also, brake fluid will not exactly do good things for your paint job, so keep if off painted surfaces.

Some cars and trucks use hydraulically actuated clutches, and they will have a separate master cylinder and fluid reservoir for the clutch system. Use the same procedure to check this system.

Power Steering. As long as we've got you messin' around in that dirty ol' engine compartment with the engine off, why not check the power steering fluid while you're in there? The power steering pump is normally located on the driver's side of the engine at the front. It will be mounted low on the engine and may be hard to see, but persevere, you'll find it eventually. It is driven by a belt, so you might as well check that too.

Most power steering pumps have a dipstick. It resembles the engine oil dipstick, but is smaller. WITH THE ENGINE OFF, remove the dipstick and check the fluid level. Since most units do not consume fluid, a low reading usually indicates a leak in the system.

If the level is low, add just enough automatic transmission fluid (called ATF) to bring the level up to a correct reading. Different types of cars use different types of ATF, so consult your owner's manual before adding the ATF.

If your particular car does not use a dipstick in the power steering pump, check to see that the fluid is at least to the base of the "chimney" attached to the top of the pump.

Automatic Transmission. Aside from bi-annual filter and fluid changes, automatic transmissions require little preventive maintenance. They normally do not consume fluid, so a low fluid level may indicate a leak. Running an automatic transmission low on fluid may cause fluid frothing with resultant transmission slipping and hard shifting. Overfilling can have the same result.

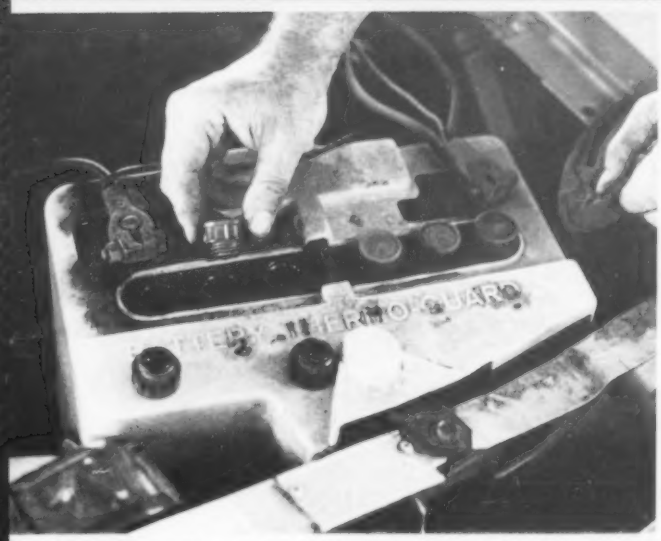
The actual procedures for checking ATF level vary so much that we can't even begin to list them here . . . consult your owner's manual for specifics.

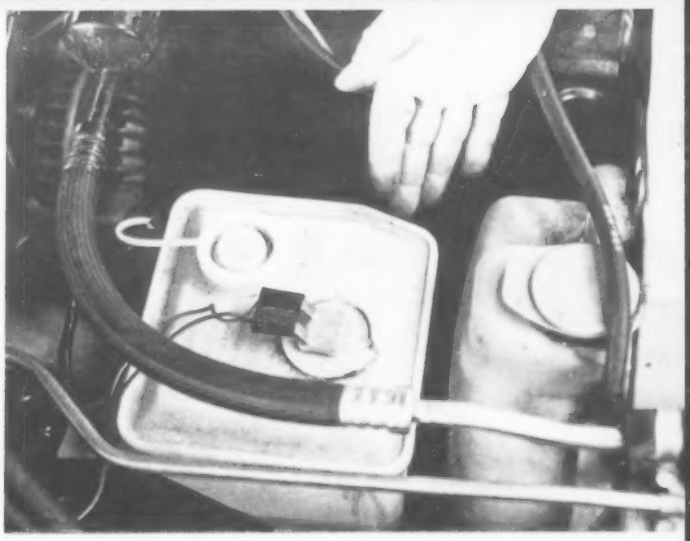
The dipstick for the transmission is usually found under the hood on the passenger side of the car, near the rear of the engine.

Again, remember that different makes of cars use different types of ATF, so consult your manual.

Semi-Annual Checks. There are four items on a car that can generally stand to go for six months between checks. Manual transmissions, rear ends, steering gear boxes, and air conditioning systems are pretty sturdy characters, but they need love and attention twice a year to provide the service we expect of them.

Manual Transmissions. Most manual transmisions have two threaded plugs in them. One will be located halfway up the side of the transmission on the passenger side. The other, a drain plug, is found on the bottom of the transmission case. Be sure the engine is off and the car is level, and, if you've got it jacked up, be sure safety stands are in place. Remove the upper





(left) Use caution when checking fluid (electrolyte) level in the battery. Remove any fluid that gets on your skin, or on the car's paint, by flushing with plenty of cold water. Check all cells, and, if you use a rag to clean the battery top, dispose of it someplace where the kids and pets can't get hold of it. **(right)** Windshield washer fluid tanks and coolant recovery system tanks are often placed close together and can be easily confused. Tanks *usually* have filling instructions on top, but use caution so that you don't put radiator antifreeze in the windshield washer tank . . . radiator antifreeze won't exactly do good things for your windshield wiper blades.

plug slowly. If lubricant starts to drip from the hole, replace the cap. That means that the level is OK. If you don't get a drip, wriggle a finger into the hole and try to feel the fluid level. Proper level is just below the filler hole. If the level is down, consult your manual for the proper type of lubricant. Many cars use 90 weight gear oil, but check anyway.

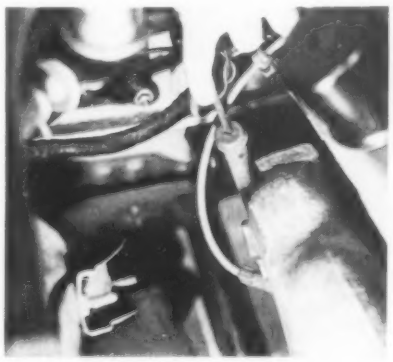
On most cars, the filler hole isn't located so that you can pour lubricant into it. To fill the transmission, we recommend using the special pump found at most service stations and hobby shops.

Rear Axle. This check is similar to the manual transmission check. Remove the filler plug on the center section of the rear axle. If fluid drains out, you're OK. If not, fill to the level of the hole using the proper lubricant.

If your car is equipped with a limited-slip or "posi-traction" rear end, remember that these critters take a special lubricant and not your garden variety 90 wt. lube.

Steering Gearbox. Each make and model of car seems to have a different method for checking lubricant in the steering gearbox, but most of them require removing a plug located on the top of the gearbox, and *not* removing the top of the box itself. Consult your manual because this can be a two-person operation with some makes.

Air Conditioner. Back under the hood once again, look for a tall, cylindrical object near the radiator. If you find such a device, and it has a little window in its top, you've located the sight glass for the air conditioning system. Clean the window by using a pencil eraser covered with cloth, and then start the engine.



Don't get upset if it takes you about three days to find the dipstick for the automatic transmission. One of our editors has a Firebird with a 400 engine, and the dipstick is just buried beneath engine and air conditioning components. These dipsticks can get just as hot as oil dipsticks, so use a rag and a bit of caution during the transmission fluid check.

Both power steering and automatic transmission dipsticks usually have marks to indicate hot or cold fluid levels.

Have a friend cycle the air conditioner controls on and off at about 30-second intervals.

Observe the sight glass as the A/C cuts in and out. A stream of bubbles that gradually disappears means the refrigerant level is OK.

No bubbles at all indicate an overfill or a complete loss of refrigerant. A continuous stream of bubbles means a low refrigerant level.

If you detect problems with the air conditioning system, we suggest you take the car to a shop equipped to handle A/C work, or to your friendly hobby shop, and secure professional assistance.

Other Checks. Although we've covered the majority of checks, we're sure that somewhere out there is a person who owns a 19XX Webbley-Smithe roadster that requires you to check the oil level in the clock every 1000 miles. There are also hydraulic suspension systems, etc., that may require checks. Let your handy-dandy owner's manual be your guide.

An old sage (or was it *Sarge?)* once said: "An ounce of prevention is worth a pound of cure." We won't say he was absolutely right, but if you're ever stranded on a back road because you're out of a vital fluid, we're sure that from that point on, you'll remember to CHECK THE LEVELS.

BACKFIRE

HANDLING EMERGENCIES

While commending you for pointing out in your April issue that handling traffic emergencies is essential to avoid accidents, I disagree sharply with one of the premises on which you base your argument.

You tell the reader: "You know your car and how it handles. You know yourself and your driving capabilities." But do most drivers really know their own abilities and limitations and those of their vehicles? Not in my judgment. I believe that most people overestimate their own skill and underestimate the potential of the automobile.

Take the example of steering to avoid collisions—a much neglected skill that could prevent many injuries and deaths, as you point out. I would ask: How does a driver learn to steer in a manner that will in fact avert an accident rather than cause an even worse mishap? Where can he master this skill but behind the wheel of his own car—the one he will have to maneuver out of a real crisis when the time comes?

Obviously the moment before a major crash is not the proper time for the driver to discover his car's capabilities and the limits to his own competence. I suggest that a new kind of hands-on, behind-the-wheel "crisis avoidance" training, given by qualified instructors in a safe, controlled environment, is the answer.

Facilities and courses of the type already used by Tony Scotti in New England and Bob Bondurant in California have proven their worth in the instruction of ordinary drivers. Using signal lights, pylons, etc., such courses simulate hazardous traffic situations on a hard-surfaced area clear of dangerous obstacles. In this controlled environment the driver learns how to react to crises and gains an appreciation of what he and his own car can and cannot do.

Granted, facilities and instructors for such training are rare at present. Yet there are qualified teachers here and there, and practical training in crisis avoidance can be brief enough to produce more instructors relatively rapidly through a "multiplier effect"—especially adept and interested "graduates" training more teachers, who in turn would instruct still more.

Skeptics will argue that the cost of establishing such programs is prohibitive. Indeed, initial expenses would be substantial. Yet I believe that when the potential benefits of such innovative but eminently practical instruction are recognized, public agencies and private concerns already seeking ways to limit accidents and to be perceived by the public as advocates of traffic safety will be willing to provide funds. Preliminary inquiries here in the Fort Devens area support my optimism.

I laud you for pointing out that handling emergencies is the key to saving lives and property on the highway. Yet I would suggest that nothing short of practical accident avoidance training can prepare drivers for on-the-road crises.

Mr. Thomas Lynch, USA
Director of Safety
Fort Devens, MA 01433

Most authorities agree with Mr. Lynch that the average motorist is not skilled enough to take advantage of the maneuverability of his vehicle in an emergency. That's why advanced driving courses such as those conducted by General Motors put such heavy emphasis on steering your way out of trouble. Nevertheless, there is a great deal you can teach yourself if you're willing to do it.

COMMUTE-A-VANNING

I certainly enjoyed your April issue with its lead article, "Commute-A-Vanning's Here!"

I think you missed one point about safety and one other point could have stood some amplification.

The first point—safety—was one I discovered while carpooling it in Dallas. While driving my pickup on the freeways in Dallas, I found that the higher seating allowed me to keep track of the three or four vehicles in front of me, not just the one car immediately in front. Vans have that same higher seating compared to sedans.

The second point—one of convenience—would come about by ordering or leasing vans with one or more optional gas tanks. The larger fuel capacity means fewer stops for fuel. My pickup is equipped with two additional tanks which gives a cruising range of about 700 miles. That's great for driving through states that have higher taxes on gasoline, too.

April is a great issue.

SFC L. Breckler, USA
HQ USAREC (PAO)
Ft Sheridan, IL 60037

PLAUDITS

I have just received the Apr '77 issue of DRIVER and felt I had to congratulate you on the superb articles and general excellent quality of your magazine.

I feel that "Handling Emergencies," "Hydroplaning," and the "Trivia-Nostalgia Test" are exceptionally well written articles.

Of all the periodicals I receive, this is by any criteria the best.

How about giving a "by-line" to the authors of these excellent articles.

Kindest regards and keep up the good work.

MR. ROBERT A. DRAPER
Reg. Traf. Safety Coord.
P.O. Box 1431
Wichita Falls, TX 76307

Thanks for your kind comments. As to by-lines, those articles written by the staff are almost always run without credit. The listing of the staff on the masthead page has been considered sufficient, but perhaps we should reconsider.

letters to the editor

Address your letters to:
Editor
DRIVER Magazine
AFISC/SEDD
Norton AFB CA 92409

PERSONAL FREEDOM?

Reading letters to The Editor reveals quite a few different interpretations of freedom. Some writers feel that safety regulations, such as helmet laws and seat belt laws, violate one's right to their own choice. Choice of what? Perhaps I am misguided but I always thought that laws designed to protect society and for self-preservation of people does not infringe on one's personal right. After all, the survivors, you and I, pay for the after effects of every death, injury, or resultant property damage . . . be it through taxes, insurance cost, or otherwise.

Consequently, those laws that affect, protect, sustain and preserve the health and well-being of all people and the environment cannot in a true democracy be subject to the idiosyncrancies of a few who, for the lack of a better excuse to offer, complain of a loss of personal freedom. A far greater loss of personal rights is involved when the multitudes have to foot the bill for payment of the after effect created by the few non-conformists.

Wonder if these same writers ever stop and think. For instance, do they truly believe there should be no such thing as restrictions/laws on rape, murder, robbery, theft, speeding, running stop signs, driving on wrong side of roads, using pot, drugs, DUI, hit and run, or requirements for ventilation, guarding, safety apparel, use of poisons, etc. Certainly these restrict and preclude a freedom of choice, yet I doubt if the complainers are broad-minded enough to place these requirements on the same level as helmet or seat belt laws. I dare anyone to show me one iota of difference. Those involved in above offenses feel that they should not be admonished or punished. Has anyone ever heard of a thief who did not feel that he should be allowed to pursue his illegal activities freely and without restraint?

Which is better, a controlled society for the protection and self preservation of all, or a freedom of choice for those few that would like to choose only those laws/regulations they desire and to ignore the rest?

Mr. C. K. Akins, USMC
604 Henson Drive
Albany, GA 31705

TAG COLLECTOR

Sure hope this makes the DRIVER Magazine which I enjoy very much.

I am a tag collector and have been at it for 20 years or so. There are between 20,000 and 50,000 tags in my collection, which consist of car, trailer, boat, dealer, promotional, personalized and many others.

I'm trying for the "World's Largest Tag Collection." Anyone who would like to help out, please do so. I am a member of Alpca (Automobile License Plate Collectors Association).

Sgt Brice David Byrd, USAF
5501 Valley View Trail
Adamsville, AL 35005

Anyone wishing to contribute to Sgt Byrd's tag collection, please write to him direct.

COMMUNICATION ON THE ROAD

Reference May 77 DRIVER article "Communication On the Road" by Major Brownfield. Question three proffered explanations for a driver flashing his brake lights systematically for a few seconds after overtaking you. Rather than indicating the "hydromatic syndrome," I've usually found this to be a way of saying "Thank you" . . . for having created a safe passing situation.

In my days of pulling a travel trailer, I would routinely slow down and/or pull slightly over so that the overtaking vehicle could safely pass. Invariably I received a double brake light tap or blinking of the running lights (especially from truckers) saying "Thank you!" It goes without saying that this always made me feel good.

Courtesy begets courtesy . . . and on the highway it can save lives!

MAJ ROBERT F. FICHNER, USA
Associate Administrator
Silas B. Hays Army Hospital
Fort Ord, CA 93941

MOTORCYCLE SAFETY PROGRAM

After reading the Jan '77 DRIVER, I was impressed with your concern and coverage of motorcycle safety. However, as good as MMC Hamlin's program is, I would like to invite you to Clark AB, Philippines, to look at a "real" area hazard-oriented motorcycle safety program.

Clark AB has a Two-Wheel Safety Committee composed of a representative from each organization on base that has a licensed motorcycle operator assigned. This Committee has been in existence since the late '60s and has sponsored and run a motorcycle safety program that takes a backseat to no one's. All of the work done by the committee is done with volunteers; some of whom devote up to six hours a week of their time.

Our present chairman is Ssgt Dave Robinson. In addition to being our chairman, Dave is also NCOIC of the only motorcycle-equipped traffic police section in the entire Air Force! His people have logged over 600,000 miles of accident-free driving on the largest Air Force installation in the Pacific.

I am presently serving as the director, Safety Education Committee and will be glad to supply you with copies of any of the material that we use in our inspection, licensing, and education programs. At present, we have over 20 articles in print for use by the unit representatives in conducting their monthly unit motorcycle safety meetings.

Your readers would also benefit from receiving information about Clark's motorcycle club. The Ridge Riders have a club that anyone can join on a *volunteer* basis. The club conducts weekly tours of the island, sponsors a racing team that competes all over the island, and sponsors monthly riding trials for street bike owners wanting to show their skills in fun-oriented events on a Sunday afternoon.

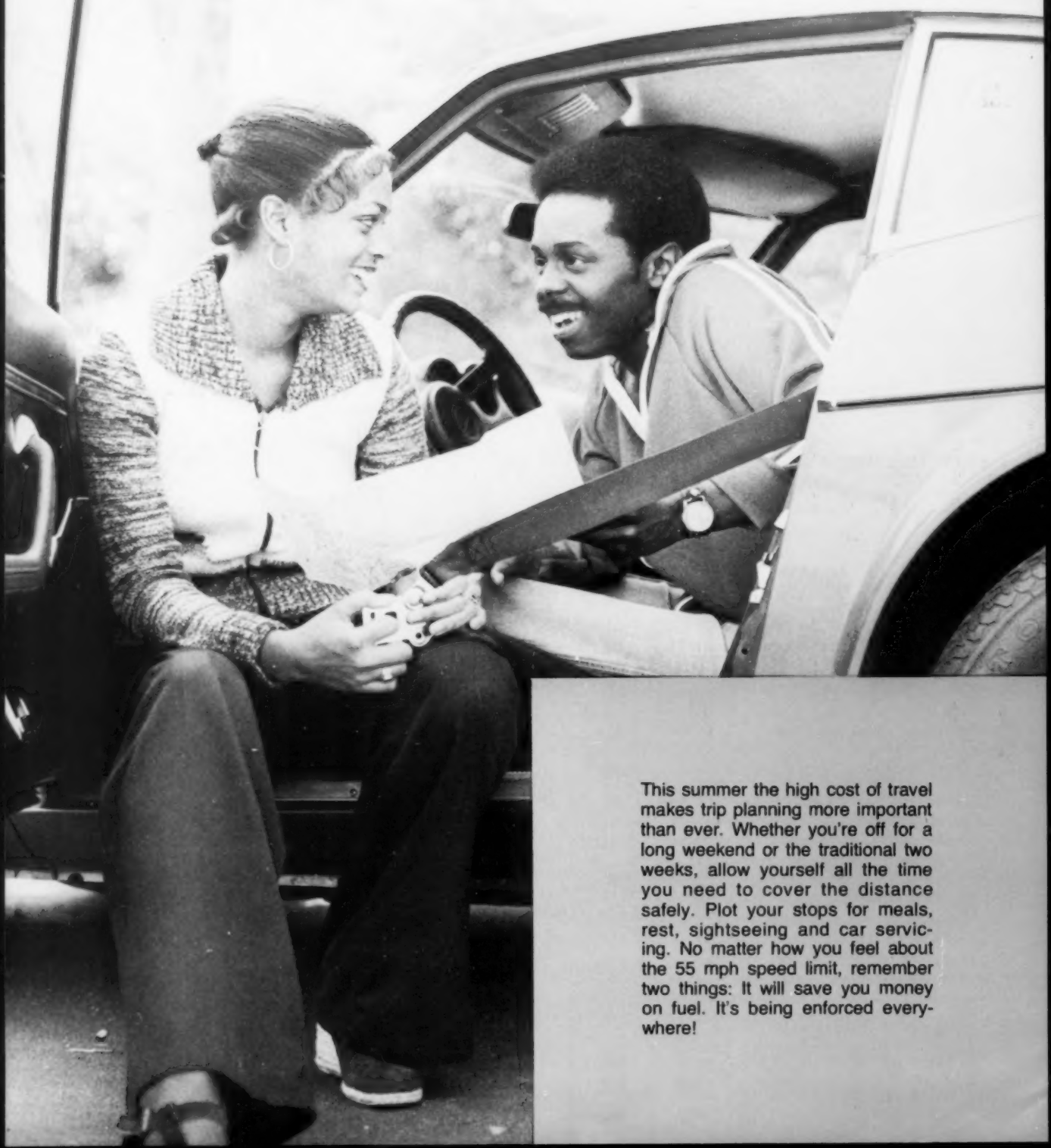
MSgt Robert E. Bassett, USAF
PSC 1 Box 1338
APO San Francisco 96286

You can bet we want to know more about the club at Clark. DRIVER is constantly amazed and delighted to hear about the safety work being done by people like Sgts Bassett and Robinson.

☆U.S. GOVERNMENT PRINTING OFFICE: 1977—783-013/9

THE DRIVERS

Barbara Jones and
SSgt Mack McQueen



This summer the high cost of travel makes trip planning more important than ever. Whether you're off for a long weekend or the traditional two weeks, allow yourself all the time you need to cover the distance safely. Plot your stops for meals, rest, sightseeing and car servicing. No matter how you feel about the 55 mph speed limit, remember two things: It will save you money on fuel. It's being enforced everywhere!